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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,017	09/12/2003	Paul E. McKenney	BEA920030005US1	6787

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EXAMINER

OKORONKWO, CHINWENDU C

ART UNIT	PAPER NUMBER
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2136

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/661,017	Applicant(s) MCKENNEY, PAUL E.	
	Examiner Chinwendu C. Okoronkwo	Art Unit 2136	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| <p>1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____</p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application</p> <p>6) <input type="checkbox"/> Other: _____</p> |
|---|--|

DETAILED ACTION

Priority

1. For the record, the Examiner acknowledges that no priority claim has been made in regards to this application.

Information Disclosure Statement

2. For the record, the Examiner acknowledges that no IDS has yet been submitted.

Oath/Declaration

3. For the record, the Examiner acknowledges that the Oath/Declaration submitted on 09/12/2003 has been received and considered.

Drawings

4. For the record, the Examiner acknowledges that the Drawings submitted on 09/12/2003 have been received and considered.

Specification

5. For the record, the Examiner acknowledges that the Specification submitted on 09/12/2003 has been received and considered.

Double Patenting

6. Claims 1-20 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of copending Application No. **10/679076**. Although the conflicting claims are not identical, they are not patentably distinct from each other because both use either a software or a hardware approach to monitor (locking) memory.

Claims 1-20 of copending Application No. **10/679076** contain every element of claims 1-20 of the instant application and thus anticipate the claims of the instant application. Claims 1-20 of the instant application therefore are not patently distinct from the copending application claims and as such are unpatentable for obvious-type double patenting. A later patent/application claim is not patentably distinct from an earlier claim if the later claim is anticipated by the earlier claim.

"A later patent claim is not patentably distinct from an earlier patent claim if the later claim is obvious over, or anticipated by, the earlier claim. In re Longi, 759 F.2d at 896, 225 USPQ at 651 (affirming a holding of obviousness-type double patenting because the claims at issue were obvious over claims in four prior art patents); In re Berg, 140 F.3d at 1437, 46 USPQ2d at 1233 (Fed. Cir. 1998) (affirming a holding of obviousness-type double patenting where a patent application claim to a genus is anticipated by a patent claim to a species with that genus). "ELI LILLY AND COMPANY v BARR LABORATORIES, INC., United States Court of Appeals for the Federal Circuit, ON PETITION FOR REHEARING EN BANC (DECIDED: May 30, 2001).

"Claim 12 and Claim 13 are generic to the species of invention covered by claim 3 of the patent. Thus, the generic invention is "anticipated" by the species of the patented invention. Cf., *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (holding that an earlier species disclosure in the prior art defeats any generic claim) 4. This court's predecessor has held that, without a terminal disclaimer, the species claims preclude issuance of the generic claim. *In re Van Ornum*, 686 F.2d 937, 944, 214 USPQ 761, 767 (CCPA 1982); *Schneller*, 397 F.2d at 354. Accordingly, absent a terminal disclaimer, claims 12 and 13 were properly rejected under the doctrine of obviousness-type double patenting." (*In re Goodman* (CA FC) 29 USPQ2d 2010 (12/3/1993)

Response to Amendment

7. In view of the amendment of claim 20 so that it cannot be directed to a computer-readable medium that is a modulated carrier signal, the Examiner acknowledges that the Applicant has overcome the 35 USC 101 rejection of claim 20.

Response to Remarks/Arguments

8. The Examiner acknowledges the arguments made regarding usage of the term "approach" within the claim limitations. The Applicant has overcome the 35 USC 112 second paragraph rejection.

In response to communications filed on 01/26/2007, applicant amends claims 1 and 20. The following claims, claims 1-20, are presented for examination.

1.1 Applicant's arguments, pages 6-16, with respect to the rejection of claims 1-20 have been fully considered but they are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Slingwine et al. (U.S. Patent No. 6,816,952 B1) in view of Vartti et al. (U.S. 6,219,690 B1)

Regarding claim 1, Slingwine et al., discloses a method comprising:
the hardware approach to transactional memory to execute the code section
satisfies a threshold based on success of at least the pseudo-transaction,
subsequently utilizing the hardware approach to transactional memory to execute
the code section, however Vartti et al. does (col. 4 lines 6-67 and col. 5 lines 1-28).

Slingwine et al. is silent in disclosing utilizing a software approach to locking memory to execute a code section relating to memory and employing a pseudo-transaction to determine whether a hardware approach to transactional memory to execute the threshold would have been successful, however Vartti et al. does provide such disclosure (col. 2 lines 58-67 and col. 3 lines 1-28 and 44-62).

It would have been obvious for one of ordinary skill in the art, at the time of the invention, to have been motivated to modify the apparatus of Slingwine et al. with the system of Vartti et al. Motivation for this modification would be to improve the program execution performance of multiprocessor and multicomputer systems because modify a “substantially zero-overhead mutual-exclusion apparatus and method [would] allow concurrent reading and updating data while maintaining data coherency” with a software version/approach to this same task would provide a user with a complete system approached the problem of data coherency from both possible approaches.

Regarding claim 2, Slingwine et al., is silent in disclosing the method of claim 1, wherein utilizing the software approach to locking memory to execute the code section comprises: placing a lock on the memory to which the code section relates; executing the code section; committing execution of the code section to

the memory as the code section is executed; and removing the lock on the memory to which the code section relates, however Vartti et al. does provide such disclosure (col. 4 lines 6-67 and col. 5 lines 1-28

Regarding claim 3, Slingwine et al., discloses the method of claim 1, wherein the hardware approach to transactional memory satisfies the threshold also based on success of previous transactions employed by the hardware approach to transactional memory to execute the code section (col. 2 lines 58-67 and col. 3 lines 1-28 and 44-62).

Regarding claim 4, Slingwine et al., discloses the method of claim 1, wherein the hardware approach to transactional memory satisfies the threshold also based on success of previous pseudo-transactions (col. 2 lines 58-67 and col. 3 lines 1-28 and 44-62).

Regarding claim 5, Slingwine et al. discloses the method of claim 1, wherein the hardware approach to transactional memory satisfies the threshold where the hardware approach to transactional memory would have successfully executed the code section a single time (col. 2 lines 58-67 and col. 3 lines 1-28 and 44-62).

Regarding claim 6, Slingwine et al., discloses the method of claim 1, wherein the

hardware approach to transactional memory satisfies the threshold where the hardware approach to transactional memory would have successfully executed the code section a predetermined plurality of times (col. 2 lines 58-67 and col. 3 lines 1-28 and 44-62).

Regarding claim 7, Slingwine et al., discloses the method of claim 1, wherein the hardware approach to transactional memory satisfying the threshold comprises utilizing a digital filter as the threshold in determining whether to utilize the hardware approach to transactional memory to execute the code section (col. 2 lines 58-67 and col. 3 lines 1-28 and 44-62).

Regarding claim 8, Slingwine et al., discloses the method of claim 1, wherein the hardware approach to transactional memory satisfying the threshold comprises utilizing information passed from a compiler to determine whether to utilize the hardware approach to transactional memory to execute the code section (col. 2 lines 58-67 and col. 3 lines 1-28 and 44-62).

Regarding claim 9, Slingwine et al., is silent in disclosing the method of claim 1, wherein the hardware approach to transactional memory satisfying the threshold comprises tracking a success rate of the hardware approach to transactional memory in executing the code section to determine whether to utilize the

hardware approach to transactional memory to execute the code section (col. 2 lines 58-67 and col. 3 lines 1-28 and 44-62).

Regarding claim 10, Slingwine et al., is silent in disclosing the method of claim 1, wherein utilizing the hardware approach to transactional memory to execute the code section comprises: starting a transaction inclusive of the code section (col. lines 11-57); conditionally executing the transaction (col. lines 11-57); and upon successfully completing the transaction, committing execution of the transaction to the memory to which the code section relates (col. 2 lines 58-67 and col. 3 lines 1-28 and 44-62).

Regarding claim 11, Slingwine et al., discloses the system comprising: a processor having transactional memory capability, including a pseudo-transactional memory capability that determines whether the transactional memory capability would have been successful; and a memory storing a spin lock function to execute a code section by utilizing the transactional memory capability upon the transactional memory capability having satisfied a threshold based upon success of at least the pseudo-transactional memory capability (col. 2 lines 58-67 and col. 3 lines 1-28 and 44-62).

Regarding claim 12, Slingwine et al., discloses the system of claim 11, further comprising a plurality of nodes interconnected to one another, one of the plurality

of nodes inclusive of the processor and the memory (col. 2 lines 58-67 and col. 3 lines 1-28 and 44-62).

Regarding claim 13, Slingwine et al., discloses the system of claim 11, wherein the memory further stores the code section, the code section programmed to call the spin lock function to execute, the spin lock function locking a portion of the memory to which the code section relates (col. 2 lines 58-67 and col. 3 lines 1-28 and 44-62).

Regarding claim 14, Slingwine et al., discloses the system of claim 13, wherein the memory further stores a spin unlock function that the code section calls to unlock the portion of the memory to which the code section relates (col. 2 lines 58-67 and col. 3 lines 1-28 and 44-62).

Regarding claim 15, Slingwine et al., is silent in disclosing the system of claim 13, wherein the spin lock function initially utilizes the transactional memory capability in locking the portion of the memory to which the code section relates, falls back to a software approach to locking memory upon the transactional memory capability failing the threshold in executing the code section, and resumes utilizing the transactional memory capability upon the transactional memory capability again satisfying the threshold based upon success of at least

the pseudo-transactional memory capability, however Vartti et al. does (col. 4 lines 6-67 and col. 5 lines 1-28).

Slingwine et al. is silent in disclosing utilizing a software approach to locking memory to execute a code section relating to memory and employing a pseudo-transaction to determine whether a hardware approach to transactional memory to execute the threshold would have been successful, however Vartti et al. does provide such disclosure (col. 2 lines 58-67 and col. 3 lines 1-28 and 44-62).

It would have been obvious for one of ordinary skill in the art, at the time of the invention, to have been motivated to modify the apparatus of Slingwine et al. with the system of Vartti et al. Motivation for this modification would be to improve the program execution performance of multiprocessor and multicomputer systems because modify a “substantially zero-overhead mutual-exclusion apparatus and method [would] allow concurrent reading and updating data while maintaining data coherency” with a software version/approach to this same task would provide a user with a complete system approached the problem of data coherency from both possible approaches.

Regarding claim 16, Slingwine et al., discloses the system of claim 11, wherein the transactional memory capability satisfies the threshold also based upon previous success of the transactional memory capability in executing the code section (col. 2 lines 58-67 and col. 3 lines 1-28 and 44-62).).

Regarding claim 17, Slingwine et al., discloses the article of manufacture comprising: a computer-readable medium and means in the medium for utilizing a hardware approach to transactional memory to execute a code section after having utilized a software approach to locking memory to execute the code section and the hardware approach to transactional memory having satisfied a threshold based at least upon a pseudo-transaction to determine whether the hardware approach would have succeeded in executing the code section (Rejected under the same rationale as claim 1).

Regarding claim 18, Slingwine et al., discloses the article of claim 17, wherein the means utilizes the hardware approach to transactional memory where the hardware approach to transactional memory would have successfully executed the code section a predetermined one or more times (Rejected under the same rationale as claim 6).

Regarding claim 19, Slingwine et al., discloses the article of claim 17, wherein the hardware approach satisfies the threshold also based on previous

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transactions utilized by the hardware approach to execute the code section and on previous pseudo-transactions (Rejected under the same rationale as claim 4).

Regarding claim 20, Slingwine et al., discloses the article of claim 17, wherein the computer-readable medium is one of a recordable data storage medium and a modulated carrier signal (col. 7 lines 1-31).

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chinwendu C. Okoronkwo whose telephone number is (571) 272 2662. The examiner can normally be reached on MWF 9:30 - 7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser Moazzami can be reached on (571) 272 4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



CCO

June 25, 2007

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6,25,07